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Alaska Reflections

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The Great Eider Egg Hunt

Field research is an adventure in the Arctic National Wildlife Refuge

BY GARY WHEELER

The drone of the Cessna 185 is almost hypnotic. My chin hits my chest and I struggle to fight off the urge to drift into sleep. As we fly northward from Fairbanks over the Yukon River, our pilot Dave motions toward the east. In the distance, a massive plume of gray smoke from a large fire ascends 10,000 feet into the sky and drifts to the southeast. Evidence of a typical summer in interior Alaska, the smoke is from one of a number of the lightning-caused fires that burn here almost every year, removing aging stands of 40-foot spruce, recycling nutrients, and stimulating new growth in a patchwork-quilt landscape

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USFWS PHOTO

A flock of long-tailed ducks, estimated to include some 1,500 birds, can be seen in the distance under evening light.

made up of fire scars of varying ages.

It is July 10, 2003, and we are headed for Demarcation Bay on the northern coast of the Arctic National Wildlife Refuge, only 5 miles west of the Canadian border. Our mission: to complete the first ground-based nesting bird survey of the Refuge's barrier islands in more than 30 years.

There is reason for uncertainty about the long-term future of these islands. They could, for example, be susceptible to increased erosion as a changing climate leaves them without the protection of ice for longer periods each year. Also, considering that two of the eider species known to breed in Alaska have declined to the point where they have been listed as threatened, and given that there is evidence of population declines for common eiders breeding

in northeast Alaska and northwest Canada, it is important to the survival of the species that we better understand the dynamics of common eider populations here. Our survey will provide baseline information for future studies and ground truthing of aerial survey counts of common eiders along the refuge's Beaufort Sea coastline. The crew consists of Arctic Refuge biologist Steve Kendall, Fairbanks Fish and Wildlife Field Office biologist Jim Zeleznak, and me.

After months of anticipation, we are anxious to begin work, but first we have to get to the survey site. Demarcation Bay is 375 miles northeast of refuge headquarters in Fairbanks. Furthermore, Federal Aviation Administration regulations for small

Continued on page 2



(Top) A female eider almost disappears as she hunkers atop her nest amid a tangle of driftwood. (Above) Down helps insulate the eggs and hide them from view. (Right) The location of each nest, its distance from water, its elevation above the water, and other data are collected. Notice the shotgun for bear protection: standard operating procedure for Alaska.

aircraft require that our pilots be able to see the ground, and all too often trips must be aborted due to ground fog or mountain passes obscured by clouds.

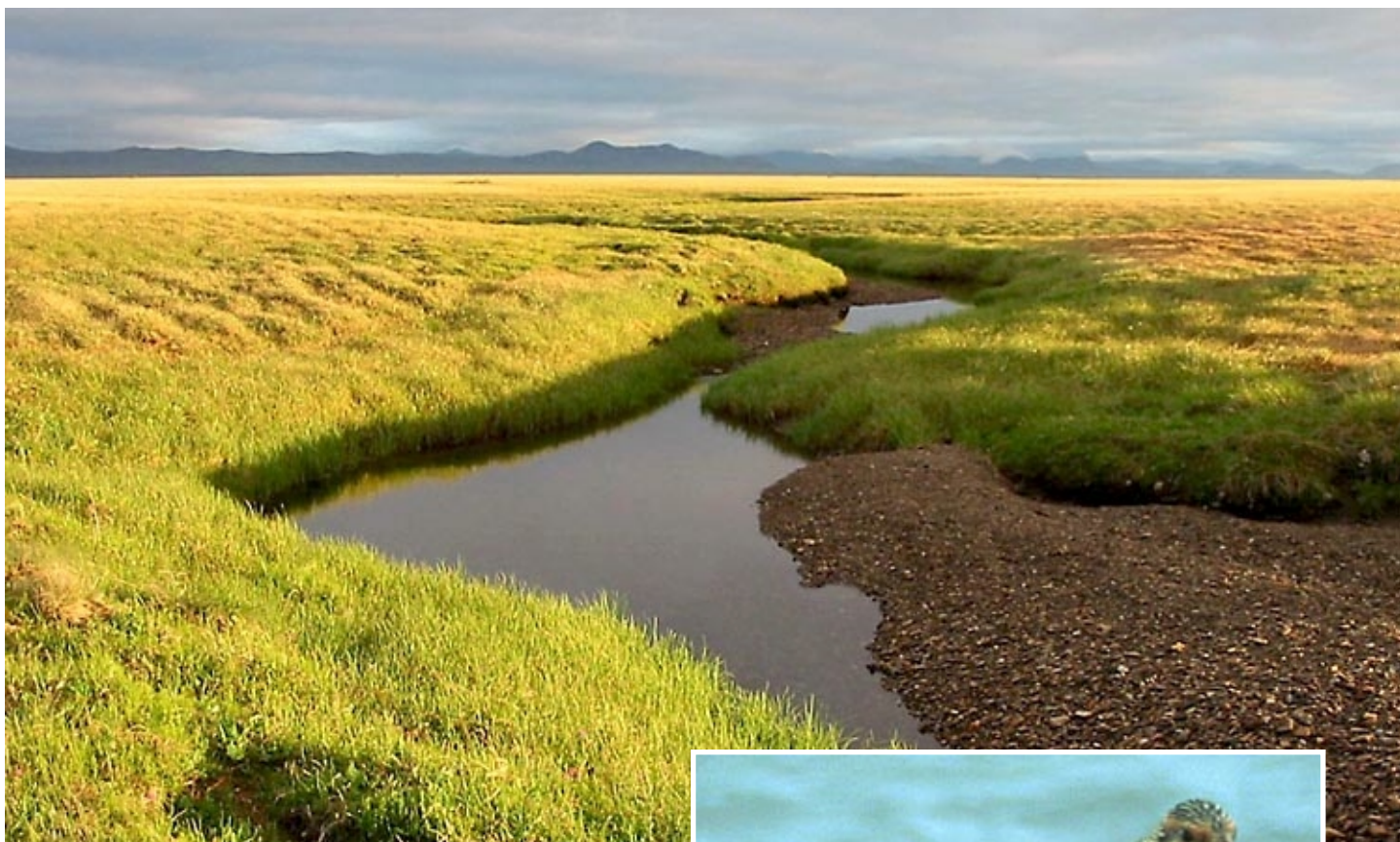
Today, as we continue northward, thunderheads are building on the southern face of the Brooks Range, and lightning flashes to the east of us. I begin to get a little nervous when Dave indicates he intends to continue northward between two billowing pillars of clouds. I have a weak stomach, and I anticipate that we are in for some major turbulence. But as we climb in elevation to clear the peaks below, the clouds seemingly part before us. I take that as a good omen for the rest of our trip.

Our route over the Brooks Range takes us up the Coleen River, over the continental divide, down the Kongakut River and across the narrow coastal plain to the Turner River. As we cross the upper Coleen, I recall a

recent study that determined this area to be the most remote spot in the United States; more than 80 miles from the nearest road or village.

After passing the Kongakut, we quickly cross over rolling foothills and a narrow expanse of coastal plain tundra. We are enroute to the mouth of the Turner River, which spills into our easternmost coastal lagoon, Demarcation Bay. There are no maintained airstrips on the refuge, but a gravel bar at the mouth of the Turner has been used as a bush strip for years. Dave masterfully sets us down on the bar. We have arrived. It is high time that we begin our survey.

Demarcation Bay is separated from the Beaufort Sea by a couple of large sand and gravel barrier islands and a gravel spit. The barrier islands typically parallel the coastline within a mile of the mainland. They tend to be long and narrow, with widths ranging from several hundred yards to 50 yards or less. These islands are largely unvegetated, although in places they support small patches of beach rye grass. One resource they do have in abundance is driftwood, even though they are more than 100 miles north of the treeline. This wood enters the Beaufort Sea after being carried down Canadian rivers such as the MacKenzie and the Firth. It typically moves westward, car-



(Above) A little tundra stream meanders its way toward the coast. (Right) A red knot, a rare visitor to the coastal plain.



ried by the near shore ocean current known as the Beaufort gyre. The driftwood found on the barrier islands is of importance to both humans and wildlife. In years past, Native people would harvest the driftwood for shelters, implements, and firewood. Waterfowl, including eiders and a few other seaduck species, use the driftwood as cover for their ground nests.

Steve takes the lead in searching, and soon calls out that he has found a nest. He points to a spot about 20 feet ahead, next to a large log. Because the incubating hen is so well camouflaged, it takes a few moments for Jim and me to spot her. The eider hen remains motionless on the nest, her head and neck outstretched and resting on the ground in front of her. She doesn't even blink, knowing that even the smallest movement will reveal her position.

As we approach within about 10 feet, she flushes from the nest in a sudden, explosion of sound and motion. She lunges forward, flapping her wings, squawking loudly, and running at full speed until she

gets airborne after 20 to 30 feet. She circles us, flying just above the ground at a distance of about 100 yards, and then lands in the lagoon. With the hen off the nest, we quickly collect the necessary data: nest location; distance from water; elevation above the water; amount of elev in the nest; number of eggs; and size and abundance of driftwood near the nest. We briefly float each of the large light-olive green eggs in the shallow, calm waters of the bay. By observing how high the eggs ride in the water, and at what angle, we can estimate when incubation began and when the eggs will hatch. That done, we return the eggs to the nest and cover them with down to insulate them against the cool afternoon temperatures and to hide them from predatory gulls and jaegers. After five minutes we finish recording our data and begin searching for additional nests. The hen remains on the water as we depart, but she will return to her eggs

after we've moved a few hundred yards down the beach.

Eider nests are sparse on the eastern end where the island is only about 50 yards wide. As we move to the west, however, the island widens to a few hundred yards, and small ponds dot the landscape. The terrain varies more in height and in the amount of driftwood present. All of these factors increase the difficulty of the survey. We use landmarks, such as large or uniquely shaped pieces of driftwood, to mark the boundaries of our searches, and I shuffle my feet in gravel to mark my trail. As the width of the island and the complexity of its terrain increases, so do the number of nests that we find. In addition to common eiders, we occasionally find nests of arctic terns, glaucous gulls, long-tailed ducks and snow



USFWS PHOTO

The remains of a Native dwelling look out upon an unrestricted view of miles of sea.

buntings. Finally we reach the western end of the 2-mile-long island, and our first day's survey is complete.

After another night that seems far too short, we are up early to pack up camp and move to the west. Our first challenge is to fit ourselves and all our gear into the boat. We have 25 gallons of fuel, 6 dry bags of gear, two 30-gallon bear-proof barrels filled with food, a 5-gallon water jug, two storage boxes, a cooler, a tool box, 3 survival suits and 3 people, all wearing floatation suits. Every bit of this needs to fit into our 14-foot boat. By the time we finish loading, we look like the *Beverly Hillbillies* going to sea! With all the gear aboard, our boat rides considerably lower in the water than it did the previous day. As a result, I must haul the boat further through the shallows before we reach water deep enough to clear the propeller. Finally, a hundred yards from shore in water nearing the tops of my hip waders, the prop clears the mud bottom and we're off.

We resume our survey on an island on the west side of the main channel into Demarcation Bay. Here we see remnants of Native occupation—driftwood

log foundations set below ground level and driftwood spruce trees set into the ground on end with their roots extending skywards. Later we learn that this was a seasonal fish camp and that the poles set into the ground served as vertical supports for fish drying racks.

After four hours of nest searching, it's time for lunch. We break out the pilot bread, sausage and cheese. As we eat I notice a lone shorebird feeding along the water's edge. This is the first shorebird we've seen on the trip. I point it out to Steve, who is an excellent birder and always quick and accurate with his identifications. After raising his binoculars, he pauses. "I'm not certain, but I believe it's a red knot" he says. Jim and I scramble for our binoculars, cameras, and a field guide. Sure enough, after a quick consultation with the field guide, there can be no doubt, it is a red knot, the first of this species any of us have ever seen! After taking a few photos we return to our lunch, pleased to have seen a bird that is rarely found in this part of the arctic.

After lunch we continue searching westward over the island. Unfortunately, before we can cover much ground, the wind picks up from the west and rain

begins to fall. With heavy drops pelting our faces, searching the island becomes a challenge. By the time we complete the task, I'm soaked and chilled by the wind. We agree it would be a good idea to quit early and find a place to camp. On the mainland, just west of Demarcation Bay, a small tundra stream empties into the coastal lagoon. Glad for a convenient source of fresh water, we decide to give it a try.

Our landing site on the mainland consists of a low gravelly spit that rises to a tundra-covered coastal bluff 30 feet above the lagoon. On the bluff lies a structure of 3 wooden poles bolted together that once supported a coastal navigational aid. The 20-foot wooden tower is now lying on its side. We decide that this is a suitable campsite, except there is no protection from the west wind that buffets us with frigid blasts right off the Beaufort Sea ice pack. We are also concerned that we may not be able to cook a meal in this wind. After some discussion, we decide that we may get some relief by using our inflatable boat as a lean-to windbreak. It works like a charm! In no time at all we have the water boiling on the backpacking stove. It lifts our spirits to drink hot tea and chocolate, huddled around our



USFWS PHOTO

The Upper Kongakut River.

little stove behind our makeshift windbreak! At 11:00 pm to the northwest of us, the sun emerges below the cloud, and Jim and I can't pass up the opportunity to venture out and admire the meandering stream and the abundant wildflowers that carpet the tundra.

As we hike westward across the coastal bluff we discover the remains of a Native dwelling. The design is simple, consisting of a single room. The walls were constructed by standing driftwood logs on end, and the flat sod roof was supported by driftwood logs extending the width of the dwelling and resting on the walls. The structure was excavated into the ground perhaps a couple of feet, as deep as the permafrost layer would allow, and sod was stacked high against the exterior walls for additional insulation. The dwelling was sited near the coast and, with the elevation provided by the bluff, it allowed its inhabitants an unrestricted view for miles out to sea. I reflect that the people who once lived here may never have had a hundred dollars to their name but still they had a million-dollar view of this spectacular country.

After an hour-long trek across the tundra, I bid Jim a good night, but still can't force myself into my tent. The midnight sun is out in full force, and all of nature seems to be taking advantage of the exceptional evening weather. As I scan the horizon, I notice a large flock of long-tailed ducks in the coastal lagoon not far below the bluff. I creep to the edge of the bluff, as close to the flock as I can get without raising alarm, sit down, and begin counting the birds. It is an impossible task. I decide to estimate the flock size by counting a portion of it and then replicating that portion until I have covered the entire flock. I count a hundred birds—and estimate that the flock contains some 1,500.

Over the next eight days we walk and boat westward toward Kaktovik, completing our foot survey of all the barrier islands in this part of the Beaufort Sea. Along the way we experience nearly every kind of weather imaginable: rain, fog, heavy winds, freezing rain, even a July 15 snowstorm; as well as a few rare and memorable hours when the winds die down, the clouds part, and the barrier islands and mainland tundra are lit up in an ethereal glow of transcendent beauty that can only be witnessed in the

arctic. On several occasions we see impressive views of the Fata Morgana, a sort of northern mirage in which bending light plays tricks on the eyes, transforming ice floes that are only a few feet high into glacial cliffs. Along the way we also see other wildlife, including loons, phalaropes, rufous-necked stints, sandhill cranes, scoters, white-fronted and Canada geese, peregrine falcons, arctic foxes, arctic ground squirrels, and even a polar bear.

After eight days, we reach the end of our journey, at the Native village of Kaktovik, with a mixture of relief and sadness. We each know how fortunate we have been to spend time in a part of the world which few will experience. Never in my wildest dreams did I, while growing up in Chicago, imagine that I would someday be boating in the Arctic Ocean, walking barrier islands virtually untouched by civilization, and searching for eider nests on the last sliver of land between the Alaska coast and the North Pole!



Gary Wheeler is Deputy Refuge Manager at Arctic National Wildlife Refuge.

Reflecting

"DANG"

On December 7, 2004 the crew of the M/V *Selendang Ayu* reported that the 738-foot cargo vessel, carrying a load of approximately 132 million pounds of soybeans, had lost power and was adrift off Unalaska Island. Efforts to tow the vessel to a safe harbor failed, and it went aground and broke apart at approximately 6 p.m., December 8. The wreck occurred between Skan Bay and Spray Cape (53° 38' 04", 167° 07' 30"), on the western shore of Unalaska. Six of the vessel's crew members were lost in the resulting rescue effort. The *Selendang Ayu* carried approximately 424,000 gallons of Intermediate Fuel Oil (IFO 380) and 18,000 gallons of Marine Diesel, in addition to its cargo of soybeans. The site is accessible only by water or air.

Thus began Alaska's latest maritime oil spill tragedy. As of this writing, it is estimated that perhaps as much as 350,000 gallons of IFO and diesel have spilled into the biologically-rich waters of the Bering Sea, and stained miles of equally productive shoreline, much of which is managed by Alaska Maritime National Wildlife Refuge. The area is home to many thousands of wintering birds, including the threatened spectacled and Steller's eiders; as well as rich marine and anadromous fisheries and a population of sea otters that had already experienced tragic declines before the spill.

By February, more than 1600 carcasses had been collected, out of a total wildlife mortality that many biologists involved fear has already reached well into the thousands, most of which will never be recovered. Rugged coastlines, fierce winter winds, limited winter daylight, and the sheer inaccessibility of the site have been among the challenges faced by those

who have worked to rescue wildlife, clean oiled shorelines, and protect vulnerable areas not yet soiled.

What has come to be known as the "Dang" spill is the worst in Alaska's waters since the 1989 wreck of the *Exxon Valdez*. It was marked, first and foremost, by the tragic loss of life as a rescue helicopter, involved in removing crewmembers from the grounded ship, crashed, resulting in the death of six of the *Selendang* crew. In the weeks and months that followed, heroic efforts on the part of many workers, your fellow Service employees among them, were made to control, respond to, and limit the damage done to the area's natural resources. Many of these men and women gave up the December holidays with their families to work, under cold, damp, and dangerous conditions, on the spill.

On page 8 of this issue of *Reflections*, Mari Reeves tells one of their stories.



Bruce Woods
Chief of Media Relations
Anchorage, Alaska

OILED BIRD SPECIES COLLECTED OR OBSERVED AS OF 1/19/2005

Yellow-billed loon
Common loon
Crested auklet
Whiskered auklet
Harlequin duck
Murrelet sp.
Pelagic cormorant
Double-crested cormorant
Long-tailed duck
Song sparrow
Horned grebe
Red-necked grebe
Black scoter
Pigeon guillemot
Common murre
Black oystercatcher
Glaucous-winged gull
Glaucous gull
Rock sandpiper
Bald eagle
American dipper

Hooked on Fishing

The staff of our Conservation Genetics Laboratory works with partners to help local kids learn about fisheries management

BY CHARITY HARING

The Conservation Genetics Laboratory (CGL) has been working with the U.S. Forest Service and Alaska Department of Fish and Game since 1992 to offer annual opportunities for children and parents to catch a fish or three, and learn about fishing and fisheries management, at Willow Pond, near Anchorage. What better way to broaden the understanding and appreciation of tomorrow's conservationists for fishery resources? This year, Kid's Fishing Day was held on June 11, 2005.

And even when the bite slacked off, there was plenty to keep the attendees entertained and educated. Activities included puppet shows, bait casting practice stations, knot tying, a hot dog roast, fish-printing on t-shirts, and visits from Woodsy Owl, Smokey Bear, and Sammy Salmon.

The CGL staff puts in a lot of effort to

ensure the success of the event. Behind the scenes preparations—including setting up the fishing gear provided to those youngsters who don't have their own, activity planning, and other organization—consume many hours. This extra work pays dividends in the form of participants' understanding of, and enthusiasm for, natural resource management. After all, the future stewardship of our lands and waters demands that we educate and communicate with the youth of today, and CGL has recognized this.

In fact, although this event is among its most popular outreach efforts, the CGL has used other tools, as well. These have included providing laboratory training for senior high school and college students, actively participating in the training of future employees through



Steve Miller lends a hand to a young angler.

USFWS PHOTO

educational programs in schools and villages around Alaska, and even teaching Advanced Placement Biology courses at local high schools. The Service's partners in such efforts have included: Anchorage School District Mentorship Program, Alaska Cooperative Fish and Wildlife Research Unit, University of Alaska Anchorage/Fairbanks, Alaska Pacific University, 4H Extension Unit—Fairbanks, Tanana Chiefs Conference, Kluane First Nations-Yukon Territory, Student Conservation Association/DOI Internship Program, Career Awareness Program, and Student Career Experience Program (SCEP).

The CGL also employs students from native communities in order to gain local knowledge and experience to increase understanding of Alaskan fisheries. Over the years, these young employees have made important contributions to many of our genetic projects.

So, keep a look out for next year's announcements for Kid's Fishing Day, and make plans to get out, learn a little about fishing conservation, and spend some time fishing with your young ones. You never know, one of them might just hook into a future career!



Charity Haring is an Occupational Safety and Health Specialist in the Anchorage Regional Office.



USFWS PHOTO

Kids Fishing Day participants found fish and fun aplenty last June at Willow Pond.

Dead Thing Duty

A biologist finds both beauty and sorrow in the wake of the *Selendang Ayu*.

BY MARI REEVES

Oil and water don't mix. You might say oil is afraid of water. Hydrophobic. That's why, when spilled in the ocean, it clings to just about everything else: Wood, grass, rocks, gravel, gulls, otters, ducks.

I walk along a cobble beach beneath a flat January sky. A light onshore breeze sweeps through Alaska's remote Aleutian Island chain. It blows hair from beneath my ball cap into my eyes and against my lips. The temperature crawls into the mid-thirties as the sun hits its daily midpoint, and no rain has fallen for several days.

I'm part of a multi-agency team working on the cleanup of the *Selendang Ayu* oil spill. The *Selendang Ayu* is a 712-foot Malaysian freighter built in 1997. It was bringing North Dakota soybeans from Oregon to China when it lost power during a Bering Sea storm. Its engines never started again.

The 40-thousand-ton ship drifted 120 miles and ran aground on the north side of Unalaska Island. According to

the most current Coast Guard reports, the vessel had almost 450,000 gallons of oily fuel on board. The winds and the waves broke the hulking boat in half and loosed more than 300,000 gallons of this oil into the surrounding landscape. Into the waters and onto the beaches and the birds. A thick, black, sticky, tarry mass. And, joining the oil, a freighter's worth of soybeans.

It is now a month after the ship wrecked. A Chinook helicopter is still

carrying loads of the remaining oil off the ship, 2,000 gallons at a time, and we are still picking dead birds off the beaches—something my co-workers and I have been doing for the past month. I like to refer to my job out here as Dead Thing Duty. We're removing the dead oiled birds from the beaches so foxes and eagles don't eat them and get sick or die, too. Each afternoon, I ride the helicopter back to the Coast Guard's incident command center in Dutch Harbor, about 25 air miles to the northeast.

Dutch Harbor, home to the Bering Sea crabbing fleet and the main fishing port on Unalaska Island, has the reputation of a Last Frontier rough-and-tumble town. The folks who fish these wintry waters are some of the toughest in the world. Bars on Saturday nights feature extreme fishing videos the way ski areas show heli-skiing flicks. As the dance music blares and the disco ball spins, waves crash over a giant trawler on-screen, swamping its raingear-clad workers. Fishermen, freed for a weekend after a month at sea, dance with hip-hugging-jean adorned local girls. Fights can be had here, if you want them, for free, especially at the end of the evening.

Most of Unalaska Island is managed as part of the Alaska Maritime National Wildlife Refuge. Seabirds spend their winters in Unalaska's ice-free waters:



Waves wash over the broken pieces of the *Selendang Ayu*.

USFWS PHOTO



Dead thing duty: workers search for the oil-covered bodies of seabirds, one of which appears as an unrecognizable tarball in the foreground.

USFWS PHOTO



(Above) The beauty of the setting made the work more bearable.
 (Right) It takes a practiced eye to pick out the oil-covered bodies of birds.

harlequins with their distinctive white-and-brown patterning, black scoters, white-winged scaup, flocks of pale green-and-white eiders, giant emperor geese with their grey bodies, orange feet and pale heads. From the Bell 212 helicopter, which ferries us daily to the spill site, the waters of the Unalaska shoreline sink from aquamarine shallows to cobalt depths.

I walk the beach, always looking down, scanning the oiled areas. Beneath my feet is oil, black and thick and slippery under the melting frost, like corn syrup or cold molasses. It forms rough brown blobs on the fine dark sand. It stains the rounded beach rocks the way old chewing gum spots the concrete of the New York City subway. On the beach's upper edge, black oil coats last summer's long, pale grasses, leaving a four-foot tall swath on the bluff. The official fact sheet on the Coast Guard's website refers to this beached oil as a "bathtub ring" at the high tide line. I am charged with gathering wintering seabirds that took that bath.

I wear blue rubber gloves now to pry these sticky bodies off the rocks. They leave smears of dark oil, like shadows, behind. Most of the birds I collect are heavily oiled, covered like caramel apples in tacky black goo. They smell like roofing tar or hot Mississippi asphalt in July. The older carcasses have putrefied, and their dead-thing stench overwhelms the

oil smell. We put these birds into their bags quickly and turn our noses into the wind.

I carry a large, clear plastic garbage bag marked with the bright yellow words OILY WASTE. Inside my labeled sack are the individually bagged remains of numerous birds. They are definitely oily. It is definitely a waste.

According to a U.S. Coast Guard fact sheet, not specific to this event, "When spilled on water, Number 6 fuel oil usually spreads into thick, dark-colored slicks, which can contain large amounts of oil. The spilled oil can float, suspend in the water column, or sink. Small changes in water density may dictate whether the oil will float or sink." In storms, the winds pile the oil on top of itself. The waves dunk it underwater, breaking it into cow-dung sized tar patties or smaller, marble-sized tar balls. "Oil can be carried hundreds of miles in the form of scattered tarballs by winds and currents." Eventually, these winds and currents sweep the oil onto the beaches, where the receding waters smear it down the shoreline as they follow the moon-stretched tides. Oil is piled on some of the beaches I walk now, up to a foot deep.

According to a different fact sheet on the same oil spill Unified Command website, "Direct mortality rates can be high for seabirds, waterfowl, and fur-bearing



marine mammals [that come into contact with oil], especially where populations are concentrated in small areas, such as during bird migrations or at marine mammal haulouts." If even a small amount of oil gets on the otters or wintering sea birds, it flattens their insulating fur and feathers and chills them to the bone. They become sick if they try to preen the oil off and can die from internal bleeding. If they accidentally land in a thick oil pancake, they get covered. They cannot easily swim or fly away. If their heads, eyes and faces are smothered, they die.

Again I quote: "Direct mortality rates are generally less for shorebirds because they rarely enter the water. Shorebirds, which feed in intertidal habitats where oil stands and persists, are at higher risk of sublethal effects from either contaminated or reduced populations of prey." Black oystercatchers scatter at our approach, shrieking alarm calls from

USFWS PHOTO

USFWS PHOTO

their bright orange bills. This flock contains twenty birds or more. They appear to be feeding on the intertidal organisms in the gravel of the beach.

I bag whole oiled birds, the occasional wing, well-scattered oily feathers, a displaced tarry head, a breastbone. They are so far removed from the land of the living that it's difficult to imagine them alive, kicking with webbed feet along the water's surface, diving beneath in search of dinners of amphipods or other small invertebrates.

Beyond the shore, mottled brown and white harbor seals follow us in the water, curious, as we walk along the beach. Steller's sea lions pack a rugged rock outcrop so thickly that they look like sun-seekers crowded on a spring-break Florida beach. Their haulout rock is frothy around the edges where the blue surf crashes white against the basalt's unyielding black. Sea otters snack on clams and mussels and tackle each other in the swells just beyond the breakers.

The stretch of beach in front of the ship is buried in several feet of fermenting soy beans. The waves at this beach are the thick turquoise color of surf on the windward shores of Hawaii. These waves are turquoise not because of suspended white sand, but because they are filled with light-colored waterlogged beans.

Because oil is not one chemical, but a mixture of many, each kind of oil or fuel has its own "fingerprint" which can be determined by the analytical lab. Usually, in oil spills, these chemical fingerprints are used to identify the source of oil on the beach. On this spill, the presence of soybeans sometimes makes the chemical analysis unnecessary. They can serve as unique identifiers for the oil from the *Selendang Ayu*.

Fortunately, few things can resist the power of the ocean, including the oil. The ocean's creatures, motions, and cycles will help break the oil down, eventually. Naturally-occurring bacteria can degrade oil and make a living off some of its chemical constituents. The sunlight also changes the oil, breaking the original compounds into different ones, some more toxic, some less. The winds, waves, and tides will tear at the oil in the coming years, breaking it into ever smaller pieces, dissolving its weaker parts, slowly eroding it away. Unfortunately these natural



Seen from above, soybeans and oil leak out of the wreck of the *Selendang Ayu*.

processes are slow, and cannot prevent the oil from doing the damage already done, and the damage that may be done while it persists.

As I stoop to retrieve another carcass, high mountains tower above me, climbing straight from the ocean. Their horizontal layers are tilted up and twisted, akin to the distinctive striations of the Canadian Rockies. These mountains are placed where their pristine snow-clad peaks contrast the ocean's deep blue, as they draw the line between the Pacific Ocean and the Bering Sea.

This place is beautiful and I love it. I mourn the loss of the birds less than I expected, however, as I move along the beach. I thought I would be depressed out here, working carcass-recovery, but I have to admit that I am not. The death is apparent, but it is old and not totally real. The birds have passed and their struggle is over. I am having fun on Dead Thing Duty the way some people enjoy a wake after a funeral: I know lives have ended, and mourn that loss, yet can still enjoy the life that continues around me, though I do so with no small amount of guilt. I think I should feel more remorse than I do, but the beauty of this environment forces me to appreciate the life that remains.

I ride home in the helicopter that burns 110 gallons of fuel per hour and watch the crab boats head out of Dutch Harbor with their pots, giant mesh cubes, stacked five-high, covering their

upper decks. They stream out of this large bay, like a line of overburdened ants, out to retrieve crabs from the bottom of the sea. Each one carries with it the heavy load of fuel it needs for the trip.

Soon, the fishermen from the bars will also get back on their trawler, bound for Asia. Their ship is powered, like our boats, our cars, and many of our homes, by petroleum fuels. The oil their trawler needs for its journey sits on top of the ocean, separated from it by strong partitions made of iron and steel. These walls serve to keep the hydrophobic oil out of the water, most of the time.

But the ocean is strong and carries lots of big boats. If oil is afraid of water, it is for good reason: When we put oil on water, even when sheathed in thick steel, accidents happen. In hopes of preventing spills in the future, several groups are now looking for ways to more safely move the cargo we need through the dangerous and delicate waters of the Aleutians. Perhaps, with ingenuity and diligence, we can prevent the next accidental mixture of oil and water in this place. Perhaps we can spare someone else the curiously ambivalent chores of "dead thing duty." Perhaps we can keep the future's boats afloat.



Mari Reeves is an Environmental Contaminants Specialist with the Anchorage Fish and Wildlife Field Office.

DIGITALGLOBE PHOTO

"It Ain't Easy, But It's Worth It"

When biologists spend more "social" time among the residents of local communities, better relationships, and thus better science, are the rewards

BY MELISSA A. ROBINSON

The humpback whitefish (*Coregonus pid-schian*) is one of the most important subsistence foods in the Interior Alaskan village of Northway, located within the borders of the Tetlin National Wildlife Refuge. So it was a matter of real concern when, in the late 1990s, some Northway residents told Federal managers that these fish appeared to be decreasing in both abundance and quality.

In response to those concerns, Fairbanks Fisheries Resource Office biologist Randy Brown initiated a research project to examine local whitefish populations.

Before 1998, biologists knew little about humpback whitefish in the Upper Tanana region. Northway residents, on the other hand, had (and have) a great deal of knowledge about the history of the resources of the Upper Tanana River system, information gained and built upon through generations of fishing and living off the land.

"My mom doing it forever, it's just a part of my life, or our lives"

—A Northway resident discussing
fishing for whitefish and the role
that it plays in her life

This study provided an opportunity to link two valuable forms of expertise—the knowledge of local fisherman and the research planned by fisheries biologists—to answer shared questions about this important subsistence resource. In the fall of 2002, the Northway Whitefish Project, a collaborative effort shared among the Northway Village Council, the University of Alaska Fairbanks, and the U.S. Fish and Wildlife Service, was begun, in hopes that this melding of knowledge would enhance the information base used to effectively manage this species.

At the outset few individuals in these groups had much experience working with



Melissa Robinson interviews Northway resident Howard Fix in his home.

their new partners. This is a situation shared among many refuges and communities with overlapping concerns. It can, however, be as rich in opportunities for meaningful collaboration as it can be rife with obstacles and pitfalls. The lessons learned over the course of the Northway project center around the importance of relationship building, and may provide valuable insights to others working toward successful—and cooperative—management of fish, wildlife, and habitat.

Lessons from the Field

"It ain't easy, but it's worth it" became my mantra as I worked my way through this process of collaboration. It's true, making the effort to understand the communities our management decisions can affect can be tough. It takes, above all, time: there is no silver bullet to magically speed up the process. However, the benefits of cooperation among local residents, managers, and researchers are well worth any growing pains. Building solid relationships with community members creates the foundation needed for such meaningful cooperation.

In our study, we found that all of the people involved had to make the effort necessary to get to know each other; not as fishermen, researchers, or managers, but as men and women who share similar interests and concerns—about their families, their jobs, their day-to-day lives. This level of communication can't be achieved with a few interviews or an hour here and there. Done right,

it can require hours spent drinking coffee together, talking about matters far removed from resource concerns, and even joining in community events.

Relationships developed in this way, however time consuming the process, make the work of the refuge or management agency easier and more effective, and can, as a bonus, be enriching for all of the individuals involved. Many of the elders I worked with throughout this project are now like grandmothers to me. They've taught me not only about whitefish biology, but many valuable lessons about life in general. So how does one build a good relationship with communities and their residents?

In my case, the answer was deceptively simple. After two months of hearing locals say that Service managers or biologists "fly in and out" of villages and rarely take the time to relax and visit, I moved from Tok (the base city for the Tetlin NWR) to Northway. Living in the village gave me the opportunity to participate in local activities and to touch people's daily lives. By doing so, I was able to demonstrate a commitment on my part to get to know folks on a personal level. Spending time in the community provided me with a much better sense of the roles that whitefish play in local culture; and thus a much better idea of how management decisions could affect local residents.

Obviously, the time and money constraints placed on most resource managers or field researchers make living in a community, or even spending a week in a village,



Northway elder Ada Gallen checks her fish net only a few miles from her home.

pretty unlikely. However, a little bit of local involvement can go a long way toward building productive relationships. First things first; it is crucial to actually visit these communities, even if only for a day, to let local residents know who you are and what you do.

Scheduling an overnight trip instead of a brief stopover, or even pausing for just a few extra hours when passing through a community, can give researchers the time needed to visit with residents in their homes; to share coffee, tea and conversation. These social moments set the foundation for future discussions about whitefish and other resource issues. Conversations

over a cup of tea can also help to establish a comfort level needed in order to talk openly about sometimes difficult topics. Remember, too, that some people don't feel comfortable expressing their views during council meetings or formal interviews, relaxed time spent with community members allows such folks the chance to speak up, and can provide valuable feedback that otherwise might be missed.

In short, developing good relationships with community members sets the stage for successful cooperation. In the case of the Northway Whitefish Project, this led to an important mingling of expert knowledge (that of both fisheries scientists and experi-

enced fishermen) about humpback whitefish, and ultimately provided information that neither group had access to before.

For example, our radio telemetry work showed that, during the three years covered by the study, tagged whitefish were seen to return to the same lakes to feed every year. Local residents not only supported the fact that these lakes are used by fish, but confirmed that whitefish had been found there for generations. In this case, the cooperation between Northway residents and biologists was mutually beneficial, and enhanced the knowledge base that can be used to manage whitefish in the Upper Tanana drainage.

Small efforts can earn great rewards. I found that bringing fresh produce from town, or hauling water for elders, were opportunities to informally repay residents for their contributions to the Service's work. Giving school presentations, attending local basketball games, or being present at monthly council meetings and events such as potlatches helped me to stay involved in the community and to build relationships. The importance of taking these little steps was perhaps best described in a statement by respected elder Darlene Northway:

"There's lot of things that we did that we never talk about. If some kids like you guys, you know you come and maybe spent some time with us, we go way back. I can go all the way back, just give me that time."



NOTE: Melissa Robinson was a SCEP student while working on the Whitefish Project, and is now serving as a Refuge Operations Specialist with the Koyukuk/Nowitna NWR. This project was part of Melissa's Master's research into the relationship between local knowledge, fisheries science, and resource management. Melissa's research was primarily funded through the USFWS (Tetlin NWR and the Fairbanks Fisheries and Ecological Services Office) and UAF's Long-Term Ecological Research Program and the Regional Resilience and Adaptation Program (supported in part by the National Science Foundation). She completed her research and received her M.S. in Wildlife Biology from UAF in spring 2005. She wishes to extend her thanks to all those who contributed to this project, in particular the community of Northway, the Marunde family, Darlene Northway, the staff at the Tetlin NWR, Randy Brown (FFO, USFWS), and Terry Chapin (UAF).

USFWS PHOTO

A Slowed Burn

The Village of Huslia, Koyukuk National Wildlife Refuge, and the Alaska Fire Service collaborate on a model fuels reduction project.

By ANDREA STEBLETON

Huslia, AK, a village located on the Koyukuk River, was the site for a successful implementation of an important component of the 2000 National Fire Plan. The plan stresses the need for defensible space (defined as an area where the amount of fuel is reduced so fire suppression is manageable) around human structures and habitations. Because of the collaborative efforts of the Huslia Tribal Council, Huslia City Council, the Koyukuk/Nowitna National Wildlife Refuge (NWR), the Alaska Fire Service, and some key individuals, the local community actively supported the project, making it a huge success.

During the course of the last Western Interior Regional Advisory Council meeting, which was held in Huslia in March of 2004, village chief William Derendoff, along with a number of elders and other villagers, expressed concern about the threat of wildfires near their village. In response, La'Ona DeWilde, an employee of the University of Alaska Fairbanks, approached Koyukuk/Nowitna Fire Management Offi-

cer Bob Williams about getting involved in a village fuel reduction project.

Bob had already concluded, based on the fact that the village was surrounded by highly flammable fuels (primarily black spruce muskeg) and because it is a part of the Koyukuk NWR, that it would be appropriate for the refuge to participate in such a project. Having grown up in Huslia, La'Ona was instrumental in generating enthusiasm among the villagers and developing the final proposal. Before long, she and Bob had obtained letters of support from both the Tribal Council administrator, Jeneva Sam, and the city council administrator, Elsie Vent.

In fact, Huslia residents proved to be eager, as a community, to make their village safer. After receiving letters of support from Huslia's tribal and city councils, Bob was able to proceed with the project. Dave Whitmer, the FMO for the Galena zone, and Marlene Eno-Hendren, the assistant FMO for the Galena zone, thought it would be beneficial for the Alaska Fire Service

(AFS) to collaborate on this project.

During the summer of 2004, Bob, La'Ona, and Marlene performed the fuels assessment of Huslia to identify potential hazards around the village. They looked at the local fuel storage site, landfill, cemetery, and a fuel line that runs out to the river. They also determined that it would be important to create a fuel brake from the northwest end of the runway to Long Lake, and another to the east of the village (the direction from which fires have historically threatened). At all these sites except the landfill, they determined the black spruce needed to be removed to create a 50-foot wide fuel break, leaving only birch and aspen. Around the landfill the spruce were selectively thinned to 8-10 feet apart and limbed up to a height of 4-5 feet, reducing the likelihood of fire climbing into the crown.

Bob, La'Ona, and Marlene prepared the formal proposal, and presented it to the Huslia city and tribal councils in August 2004, earning unanimous support. The community then took charge of the project, with the Service and AFS acting as resources. The tribal council agreed to oversee the project and Lary Schafer, tribal council administrator, agreed to be the project administrator.

During the winter of 2005, Bob and Marlene applied for permits, assisted in the environmental analysis of the treatment sites, and looked for funding. Thanks to their efforts, a grant for \$80,000 was secured through the Service to fund the Huslia fuels reduction project.

With all of the proper permits and the agreement for funds in hand, Lary Schafer began hiring the crew in the spring of 2005. Clinton Weter and Warner Vent signed on as crew supervisor and alternate supervisor, respectively. Ten other local crew members were hired and the project was ready to begin.

After a briefing from Bob on the project specifications, Clinton and Warner put the



The Crew—Clinton Weter (crew supervisor), Warner Vent (alternate crew supervisor), Clavin Jackson, Alvin Attla, Paula Bifelt, Speedy Sam, Hudson Sam, Dewin Bifelt, Brian Weter, Floyd Vent, Conrad Vent, Travis Sam, Byron Peters, Ryan Olin, Donavon Olin, Patrick Henry, & Willis Derendoff. (Not all pictured)

crew to work on May 23, 2005. The black spruce was thinned, limbed up, or completely removed, depending on the work specified for each site. Once the spruce was cut, the resulting biomass was hauled by trailer to the nearby river bank in an attempt to slow erosion, which has been a local problem. This tactic appears to have been successful by holding the line against further losses to the river, although other erosion-control options are also being explored.

Because of the crew's hard work and dedication, the project was largely completed within only 4 weeks. Although this effort doesn't completely eliminate the risk that a future wildfire will affect Huslia, it certainly reduces the risk of a catastrophic burn.

This project couldn't have been completed without the support and understanding of the community of Huslia. It should provide an excellent example for other rural villages to follow in order to better protect their residents and homes against wildland fire.



When this piece was written, Andrea Stebleton was a biological technician on Koyukuk/Nowitna NWR. She has since returned to school to continue her studies.

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FISH SCHTICKS

by Ron Laubenstein & Bruce Woods



All the natural signs indicated that the summer of '05 would be a buggy one.



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